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EXAMINER

HOLT, DAVID L

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/510,208	<b>Applicant(s)</b> JOHANNESSEN ET AL.	
	<b>Examiner</b> DAVID HOLT	<b>Art Unit</b> 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 3-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-17 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 17 January 2008 have been fully considered but they are not persuasive. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "a sensor that measures actual physical two and three-dimensional characteristics of objects") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

2. With respect to claim 16, applicant argues that "Spears et al. does not disclose a sensor for imaging characteristics of an object where the sensor includes a first area of pixels for imaging three-dimensional characteristics of the object and a second area of pixels for imaging two-dimensional characteristics of the object." Applicant Remarks, p. 8, ¶ 3. Examiner respectfully disagrees. As applicant admits there is reference to "three-dimensional color space and two-dimensional luminescence space," and examiner contends that these are "characteristics" of the object. Applicant Remarks, p. 8, ¶ 3. Therefore, applicant constructively admits that Spears et al. teaches "three dimensional characteristics." Applicant appears to attribute physical dimensions to the phrase "three-dimensional characteristics" with the following: "[u]nlike Spears et al., the present invention includes a sensor that measures actual physical two and three-dimensional

characteristics of objects.” Applicant Remarks, p. 9, ¶ 2. Examiner contends, however, that this argument reads limitations from the specification into the claim language.

***Claim Rejections - 35 USC § 102***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 3, 4, and 6-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Spears et al. (US 7027193).

**Claim 16**, a sensor, has the following limitations, all taught by Spears:

- a first area of pixels having a first degree of resolution, the first area imaging three-dimensional characteristics of the object (Large sensor areas 100, 102, and 104; Fig. 3. “An embodiment of a multiple resolution sensing apparatus;” column 3, lines 12-13. “The first array also is operative to generate color information corresponding to an image;” column 3, lines 16-18. Therefore, the first array operates in three-dimensional color space.)
- a second area of pixels having a second degree of resolution different from the first degree of resolution, the second area imaging two-dimensional characteristics of the object (Small sensor area 106, Fig. 3. “An embodiment of a multiple resolution sensing apparatus;” column 3, lines 12-13. “The second array is operative to generate luminance information corresponding to the image;” column 3, lines 22-24. Therefore, the second array operates in two-dimensional luminance space.)
- wherein the first area of pixels and the second area of pixels absorb electromagnetic radiation from the object and convert the radiation absorbed into electrical charges (“

. . . the exposure time may be different for each sensor size to enable each sensor to generate sufficient electrons to provide a specified signal level at a specified maximum illumination intensity . . . .” ‘193 Patent, col. 4, lines 35-38.)

**Claim 3** adds the following limitation, taught by Spears:

- at least one of the two areas is provided in its entirety or partially with color filters in order to image the object in color (“The first array also is operative to generate color information corresponding to an image;” column 3, lines 16-18. Illustrated in Fig. 3)

**Claim 4** adds the following limitation, taught by Spears:

- the first area is designed as a matrix having N rows and M columns, that the second area is designed as a matrix having X rows and Y columns and that Y is b multiplied by M columns, where b is an integer greater than zero (“the sensor areas in rows 10, 12 and 14 are drawn as approximately 7 units wide by 8 units high, and the sensor areas in double rows 20, 22 and 24 are drawn as approximately 3 units wide by 4 units high;” column 5, lines 14-17. Here, M is 4 and Y is 8, thus b is 2.)

**Claim 6** adds the following limitation, taught by Spears:

- at least one of the areas is provided with filters for different wavelengths in order to minimize crosstalk (“double row 106 may have a filter that suppresses infrared light;” column 4, lines 32-33)

**Claim 7** adds the following limitation, taught by Spears:

- the first area and the second area are arranged parallel in a transverse direction as one integral unit (photosensitive element array 502, Fig. 5)

**Claim 8** adds the following limitation, taught by Spears:

- the first area and the second area are arranged parallel in a transverse direction as two separate units (large sensor area 200, 202, and 204, and small sensor area 206, 208, 210; Fig. 3. These areas are separated by a gap as shown in photosensitive element array 502, which can be interpreted to separate these two units)

**Claim 9**, a system for measuring character dependent parameters, has the following limitations, all taught by Spears:

- at least one light source, that emits light towards the object (“...sequentially illuminate the row with different colored light sources, such as Red, Green, and blue Light Emitting Diodes;” column 10, lines 27-29)
- a sensor comprising a first area of pixels having a first degree of resolution, the first area imaging three-dimensional characteristics of the object; and a second area of pixels having a second degree of resolution different from the first degree of resolution, the second area imaging two-dimensional characteristics of the object, wherein the first area of pixels and the second area of pixels absorb electromagnetic radiation from the object and to convert it into electrical charges (photosensitive element array 502 in scanner 500, Fig. 5)

**Claim 10** adds the following limitation, taught by Spears:

- the system also comprises an output register arranged to read out the charges received in the sensor (First coupler 538 acts as an output register, Fig. 5)

**Claim 11** adds the following limitation, taught by Spears:

- the system also comprises at least two output registers arranged to read out the charges received in the sensor (“...one system may employ a transfer gate to

transfer the charge off of the photosensitive element into a shift register which collects the charges;" column 9, lines 33-35)

**Claim 12** adds the following limitation, taught by Spears:

- the first area and the second area of the sensor are each read out on their own output register ("Such an amplifier which collects charges from a shift register is intended to be equivalent to the first amplifier 602 residing in the first coupler 538;" column 9, lines 37-39. Therefore, each row would have a shift register, and, thus, each area would have its own set of shift registers.)

**Claim 13** adds the following limitation, taught by Spears:

- if the second area of the sensor is provided with color filters, color picked up has its own output register ("The first array also is operative to generate color information corresponding to an image;" column 3, lines 16-18. Illustrated in Fig. 3. Since this area's function is to collect color information and it has a set of shift registers, color has its own set of shift registers.)

**Claim 14** adds the following limitation, taught by Spears:

- the system further comprises an A/D converter arranged to convert the electrical charges from an analog to a digital format and that the output register is a digital output register (analog/digital conversion unit 506, Fig. 5. This conversion unit feeds into a memory system 528 that temporarily stores information for processing in a digital format. This temporary storage is equivalent to an additional output buffer.)

**Claim 15** adds the following limitation, taught by Spears:

- the system also comprises an image/signal processing unit arranged to analyze the electrical charges (image processing system 508, Fig. 5)

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Spears et al. (US 7027193), in view of Shimamoto et al. (US 6005617).

**Claim 5** adds the following limitation, not taught by Spears:

- time delay integration is used on the second area

Shimamoto teaches a subscanning system in which a narrow imaging device subscans the imaging plane of the lens system achieving TDI operation. This subscanning system could be applied to the image sensor taught by Spears. It is, in fact, specifically disclosed that Spears' sensor applies to "line arrays commonly used for optical image scanners." (column 1, line 21-22)

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the sensor taught by Spears with the subscanning system taught by Shimamoto, because the combination would have "an exposure time of less than one of several tenths of a second using a sensor chip that is sufficiently smaller than that of an area sensor." (column 1, lines 64-66)



7. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Spears et al. (US 7027193), in view of Okino et al. (US 5682437).

**Claim 17** adds the following limitation, not taught by Spears:

- the three-dimensional characteristics include width, height, and volume

Okino, who teaches a method of converting two-dimensional images into three-dimensional images, does teach this limitation: converter illustrated in figure 1.

At the time the invention was made, it would have been obvious to one having ordinary skill in the art to combine that the sensor taught by Spears with the method of converting two-dimensional images into three-dimensional images taught by Okino, because the combination could be easily be performed by one having ordinary skill in the art and would yield predictable results.

#### ***Allowable Subject Matter***

8. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***/Ngoc-Yen T. VU/***

***Supervisory Patent Examiner, Art Unit 2622***